HARDWARE BASED METHOD FOR DIGI-TAL RIGHTS MANAGEMENT INCLUDING SELF ACTIVATING/SELF AUTHENTICA-TION SOFTWARE

Abstract

Hardware based digital rights management includes designating software for protection via a code or identifier associated with the software and detected by a hardware based authorized representative entity resident on a user computer, network, or device, remotely located relative to the user, or both. Representative hardware based implementations may be in the form of a chip, chipset, PC card, processor, and/or integral with a CPU, preferably supplied on an OEM basis. Authorized representative functions are programmable and/or hard coded. Software/digital content is self-activating/self-authenticating when used in conjunction with a resident authorized administrator. During the first use or transfer of content designated for protection, the authorized representative generates a password or authentication code at least partially based on registration information including user system in-

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Description

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Background of Invention

The present invention relates to a method and an apparatus for calculating a PMV (Predicted Mean Vote) value as predicted mean thermal sensitivity representing the degree of comfort in an indoor environment.

In a conventional apparatus, as a formula for calculating a PMV value as predicted mean thermal sensitivity, the PMV equation defined by ISO 7730, i.e., the following equation (1), has been employed:

 $PMV = (0.303e^{-0.036M} + 0.028) \times [(M - W') - 3.05 \times 10^{-3} \cdot \{5733 - 6.99(M - W') - Pa\} - 0.42\{(M - W') - 58.15\} - 1.7 \times 10^{-5} \cdot M \cdot (5867 - Pa) - 0.0014 \cdot M \cdot (34 - Ta) - 3.96 \cdot 10^{-8} \cdot fc\ell \cdot \{Tc\ell + 274\}^4 - (Tr + 273)^4\} - fc\ell \cdot hc \cdot (Tc\ell - Ta)]$ $Tc\ell = Tsk - 0.155 \cdot lc\ell \cdot \{3.96 \times 10^{-8} \cdot fc\ell \cdot \{Tc\ell + 486\} + 10^{-8} \cdot fc\ell$

$$274)^{4} - (Tr + 273)^{4} + fc\ell \cdot hc \cdot (Tc\ell - Ta)]$$

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$$hc = \begin{cases} 2.38 (Tcl - Ta)^{0.25} \\ for 2.38 (Tcl - Ta)^{0.25} > 12.1\sqrt{Vair} \\ 12.1\sqrt{Vair} \\ for 2.38 (Tcl - Ta)^{0.25} \le 12.1Vair \end{cases}$$

Tcl = clothing surface temperature

Tsk = skin temperature

Pa = RH·Pa* RH = humidity

Pa* = saturated water vapor pressure

M = activity amount
W' = work amount
Ta = air temperature
Tr = radiant temperature

Ice = clothing thermal resistance

Vair = air velocity
fcℓ = factor

Such a conventional PMV equation, however, is a collection of large number of terms, and has a very complicated formation, e.g., biquadractic terms of $Tc\ell$ and Tr and repetitive calculations of $Tc\ell$.

For this reason, in the conventional method, complicated arithmetic processing is required, and hence the processing time is undesirably prolonged. Moreover, the cost of the PMV calculating apparatus is inevitably increased, thus posing some practical difficulties in the use of such a PMV calculating apparatus as a PMV sensor for building airconditioning.